

# Unit Planning Guide: Grade \_3\_ Unit \_\_5\_ of \_6\_\_

Unit Title: Fractions	Pacing (Duration of Unit): 5 weeks
Grade: 3	Buffer Day(s): 2

## Desired Results

### Transfer Goals

Students will be able to independently use their learning to:

- MP.1. Make sense of problems and persevere in solving them.
- MP.2. Reason abstractly and quantitatively.
- MP.3. Construct viable arguments and critique the reasoning of others.
- MP.4. **Model with mathematics.**
- MP.5. **Use appropriate tools strategically.**
- MP.6. Attend to precision.
- MP.7. Look for and make use of structure.
- MP.8. Look for and express regularity in repeated reasoning.

### Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

<p><b>Standards (Priority Standards in bold):</b></p> <p><b>3.NF.1</b> Understand a fraction <math>\frac{1}{b}</math> as the quantity formed by 1 part when a whole is partitioned into <math>b</math> equal parts; understand a fraction <math>\frac{a}{b}</math> as the quantity formed by <math>a</math> parts of size <math>\frac{1}{b}</math>.</p> <p><b>3.NF.2</b> Understand a fraction as a number on the number line; represent fractions on a number line diagram.</p> <p>a. Represent a fraction <math>\frac{1}{b}</math> on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into <math>b</math> equal parts. Recognize that each part has size <math>\frac{1}{b}</math> and that the endpoint of the part based at 0 locates the number <math>\frac{1}{b}</math> on the number line.</p> <p>b. Represent a fraction <math>\frac{a}{b}</math> on a number line diagram by marking off a lengths <math>\frac{1}{b}</math> from 0. Recognize that the resulting interval has size <math>\frac{a}{b}</math> and that its endpoint locates the number <math>\frac{a}{b}</math> on the number line.</p> <p><b>3.NF.3</b> Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size</p> <p>a. Understand two fractions are equivalent (equal) if they are the same size or the same point on a number line.</p> <p>b. Recognize and generate simple equivalent fractions, e.g., <math>\frac{1}{2} = \frac{2}{4}</math>, <math>\frac{4}{6} = \frac{2}{3}</math>. Explain why the fractions are equivalent e.g., by using a visual fraction model.</p> <p>c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form <math>\frac{3}{1}</math>; recognize that <math>\frac{6}{1} = 6</math>; locate <math>\frac{4}{4}</math> and 1 at the same point of a number line diagram.</p> <p>d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</p>	<p><b>WIDA for English Language Learners</b></p> <p>Standard 1: ELLs <b>communicate</b> for <b>Social</b> and <b>Instructional</b> purposes within the school setting</p> <p>Standard 3: ELLs <b>communicate</b> information, ideas and concepts necessary for academic success in the content area of <b>Mathematics</b></p> <p>In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.) appropriate language function expectations and scaffolds or supports.</p>
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**Meaning (\*Mostly assessed through Performance Tasks/Assessments)**

<p><b>Big Ideas:</b> (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)</p> <ul style="list-style-type: none"> <li>• The size of the fraction part is relative to the size of the whole.</li> <li>• When the numerator and denominator are the same number, the fraction equals a whole.</li> <li>• Fractions are the same size if they are at the same point on a number line.</li> <li>• Whole numbers can be expressed as a fraction.</li> <li>• The location of a fraction represents the distance from zero on a number line</li> </ul>	<p><b>Essential Questions:</b> (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> <li>• What is a fraction?</li> <li>• Why is the size of the whole important?</li> <li>• How can you compare fractions?</li> <li>• How can you compare fractions with like denominators?</li> <li>• How can you compare fractions with like numerators?</li> </ul>
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Acquisition (*Mostly assessed through traditional summative assessments)	
<p><b>Knowledge:</b> Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.</p> <p><b>Students will know ...</b></p> <ul style="list-style-type: none"> <li>· Fractions as numbers</li> <li>· Fraction parts must be equal sized</li> <li>· The number of equal parts tells how many make a whole.</li> <li>· Recognize that the numerator is the top number of a fraction and it represents the number of equal sized parts of a set or whole.</li> <li>· Recognize the denominator is the bottom number of a fraction and it represents the total number of equal sized parts.</li> <li>· A fraction <math>1/b</math> is formed when a whole is partitioned into <math>b</math> equal parts</li> <li>· a fraction <math>a/b</math> is formed a parts of <math>1/b</math> fractions</li> <li>· a fraction is a location on a number line based on its distance from 0</li> <li>· two fractions are equivalent if they are the same size, or the same point on a number line</li> </ul> <p><b>Key Academic Vocabulary:</b> -</p> <ul style="list-style-type: none"> <li>• equal parts, equal distance (intervals), equivalent, equivalence, numerator, denominator, unit fraction</li> </ul>	<p><b>Skills:</b> The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)</p> <p>Students will be skilled at:</p> <ul style="list-style-type: none"> <li>· Comparing fractions by using visual fraction models and strategies based on noticing equal numerators and denominators (analyzing)</li> <li>· Using a variety of context (candy bars, cakes) and a variety of models (circles, squares, fraction bars and number lines) to represent fractions. (applying)</li> <li>· Solving word problems that require them to create and reason about fair share (applying)</li> <li>· Using visual fraction models and number lines only to show equivalent fractions (applying)</li> <li>· Reasoning about how fractions are compared (evaluating)</li> <li>· Writing a unit fraction (applying)</li> <li>· Explaining concept that the larger the denominator, the smaller the size of the piece (understanding)</li> <li>· Representing halves, thirds, fourths, sixths, eighths, using various fraction models (applying)</li> <li>· Representing fractions on a number line between zero and one (applying)</li> <li>· Expressing whole numbers as fractions (remembering)</li> <li>· Generating simple equivalent fractions (creating)</li> <li>· Using fractions along with visual fraction models to represent parts of a whole (applying)</li> <li>· Using fractions to represent numbers, greater than, less than or equal to 1 (applying)</li> <li>· Comparing 2 fractions with the same numerator or same denominator by reasoning about their size (analyzing)</li> <li>· use <math>&lt;</math>, <math>&gt;</math>, and <math>=</math> when comparing fractions (remembering)</li> </ul>